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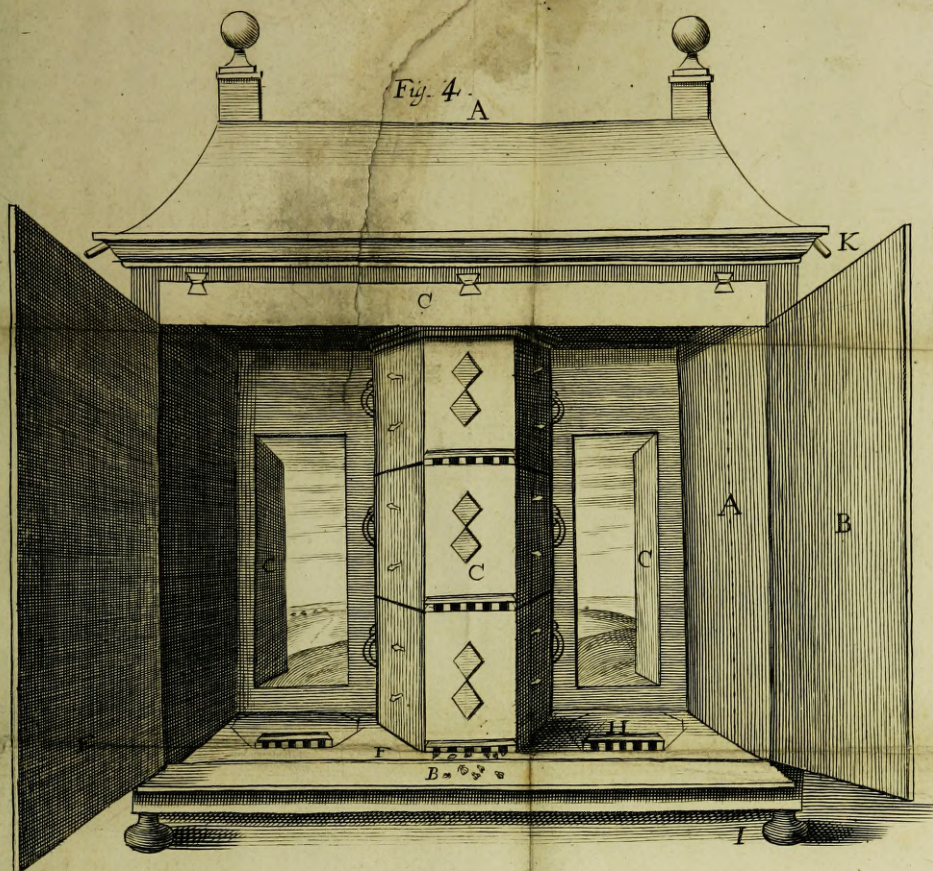


Fig. 1.

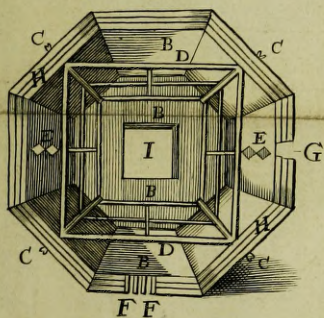


Fig. 2.

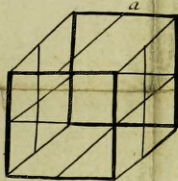
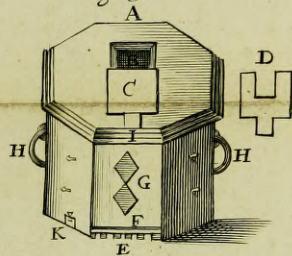


Fig. 3.



A
NEW DISCOVERY
OF AN
Excellent Method
OF
Bee-Houses,
AND
COLONIES,
WHICH FREES

The owners from the great charge and trouble that attends the Swarming of Bees, and delivers the Bees from the evil reward of Ruine, for the benefit they brought their Masters; advantaging their Owners many-fold, above what ever any Method heretofore practised doth.

Experienced Seven Years by *John Gedde* Gent. Inventor; and approved by the Royal Society at *Gresham Colledge*.

The Third Edition, Enlarged, with several Objections answered.

L O N D O N,

Printed for the Author, and sold by several Booksellers, in the City and Country, 1677.

Advertisement.

That his Majesty hath given and granted by Letters Patents under the great Seals of the Kingdoms, to John Gedde and his Partners, and Deputies, the full and sole Power, Priviledge and Authority of using, practising, exercising and enjoying the new Art and Invention for the Improvement of Bees, during the space of fourteen Years, according to the Statutes made in that behalf: Barring and excluding all others whatsoever from Making, Using, Practising, Counterfeiting, Imitating, or Resembling the same, without the Special Licence and consent of the said John Gedde and his Partners, or Deputies, first had and obtained, under the Penalties by the said Statutes in like case provided.



T O T H E R E A D E R,

HAVING formerly given the Publick some directions concerning the right way and manner of improving Bees, in the form of Bee-House, Boxes, and Colonies, which have been put in practice in many parts of these Kingdoms, Especially in twenty and seven Counties of England, where they have had a full years tryal and experience thereof, to their great satisfaction; so that now the demonstration of the invention, is experienced so practicable, and profitable, that I scarce think there needs any more arguments to perswade all

To the Reader.

industrious persons to take and make use of it; But because (as all Bee-masters know) there is not a year, in which these pretty Artists produce not aliquid Novi, worthy observation, which (though to experienced Bee-Masters, may prove a great encouragement) to the unexperienced affords ground of new objections.

Therefore, for the satisfaction of such, who have already raised objections, and for the better informing of all persons to practise the same in a right way and manner, I have been at expenses and much travel through the Country, to learn my self, and cause others to take notice of all the objections raised by any person, worthy consideration: and all observations worthy the publishing. All which I have caused to be added in this Edition to what was in the former little

To the Reader.

the Tract: I have also amended some considerable faults, occasioned by the misplacing of several Letters in the explication of the Scheme of the Boxes and House; I have taken away all, which I judged superfluous, that so you need be troubled with nothing, but what is necessary, for your better understanding, and practising this new Invention: All, which I have done, for the Satisfaction of all concerned, and for the advancement of this so publick a good, that it may be practised not only by the Rich, but even by the poorest countryman.

I will make no Apology either for the style, or any other defects, which may be obvious to the Critical Reader; The approbation of the Royal Society, and of the most famous Bee-Masters in England; The ocu-

To the Reader.

lar demonstration of the practice of this invention, in some hundreds of places in England, my own seven years experience, the Experience of many Persons of Quality, and many others of all Ranks, with the approbation of his Royal Majesty, is a sufficient Testimony of the commodiousness and benefit of this new invention.

A
NEW DISCOVERY
OF
An Excellent Method
OF
BEE-HOUSES
AND
COLONIES.

THE many famous and learned Authors, who have writ concerning the Honey-Bee, have so abundantly enlarged themselves in the praises of that excellent Creature, which by
so

so long and many experiences, is found to be so industrious and profitable, that not only the laborious and learned, but even many Kings and great Men have accompted it a delightful and profitable labour, to bestow time and expences, to provide convenient places for their preservation, work, and feeding. Amongst these, *Melissus* King of *Crete*, is reported to be the first who invented and taught the use of Hives, and Honey. *Gulielmus à Conchis* writes that in his time, a *Roman* Consul was so much delighted with this excellent Creature, that he caused Hives of fine Horn to be erected in his Gardens, that through the Horn he might observe their work.

History affords many more instances of Honourable Persons, who, in all ages, have delighted

delighted in this care of Bees: Yea, many at this time in *Poland*, and other Kingdoms, make good Reveuues by the profitable improvement of Bees; and it is certain, that if Apifactories were encouraged, a Kingdom might be considerably advantaged thereby.

But the usual forms of straw-Hives, are subject to so many inconveniences, charge, trouble, and other casualties, that men have been much discouraged from the pleasant and profitable improvement of Bees. This many have discovered and complained of, and have tryed many experiments to get a full and clear prospect of their work and labour, and to continue the same in their Gardens so long as they could: all these inconveniences I found in my experience, which animated me to

to essay, if by a new form of Hives, these might be redressed or prevented ; After I had tryed several forms, at last I found one which answered my expectation.

And after I had communicated in general my experience to several persons of Quality, they judged the invention more commodious, and better than any hitherto used, and desired me to publish it ; which I was unwilling to do, untill by further experience I had found the great advantage and convenience of the same.

But while I thought only of communicating this invention to my friends and acquaintance, I was advertised by an ingenious Gentleman, that the illustrious Royal Society at *Gresham Colledge* (those great encouragers and promoters of Learning

Learning and all good inventions) had in a Transaction (Numb. 96. July 21. 1673.) given a description of one of my Boxes (which they had gotten from the learned Sir *Robert Murray*, and he from Sir *William Thomson*, who had got it from me, together with a written description of its parts and use, not intended for publication, but for private satisfaction only) and that they had approved the same, as the best form of Hives yet invented.

This encouraged me to the publication of the House and Hives together; for (I supposed) if the Illustrious Society esteemed so much a lame and defective representation of a part, then would they much more approve the whole Invention when certified of the long experience, commodiousness, and

and conveniency of the same.

But because I design not to heap up more words than are necessary for a plain understanding of the right improvement of the industrious Bees; I recommend the Curious to the observation of the Creature it self, where they may have satisfying contemplations daily renewed.

Before I proceed to the practical part of the experiment, I shall only add a word of the usefulness of Wax and Honey. There is none who knows not how much they conduce to the health and satisfaction of man; it is these which adorn your Feasts and Funerals, they have their own share in your food and Physick. They who would be better informed of their particular uses may consult *Plinie*, *Dioscorides* or any other

other Naturalist. I shall conclude this with the answer of *Democritus*, who lived (as they write) an hundred and nine years, and being asked by what means men might continue in perfect health, and live long, answered, by anointing their bodies with Oyl, and eating Honey.

Before I describe the Boxes, Colony, and House, for their security and preservation, I would propose the following Hypotheses or Fundamentals, proved by experience of all Bee-Masters, upon which, as on a base or foundation, the whole structure of the ensuing discourse is founded, and they are these.

1. First, it is natural for all Bees to begin at the top, and work downwards.

2. That Bees swarming abroad,

broad, is occasioned through their want of room at home.

3. That a great hinderance of their labour, is confusion about swarming abroad, and mispending their time in luxury.

4. That idleness causes luxury, extravagant, unprofitable and unseasonable increase of Bees; which being by this commodious method, in the right use thereof, prevented, the usual, but unkind requital of smothering and drowning is likewise avoided.

5. That Bees do not live in vigor above three years, and that all of them ordinarily die in four years at most.

6. That the great charge, and trouble in attending on the swarming of Bees, does discourage the owner, and consume his profit.

The Description of the Boxes or Hives.

THE Boxes may be made of Wainscot or Fir Deals, or of the same materials, which Pails for carrying water are made of, or as your Bushel or Peck measure.

For their dimension, it is convenient, that each Box be of that largeness, that it may contain a Bushel, the height not exceeding ten inches; and its breadth eighteen inches, that they may more conveniently stand upon one another, and that when the Bees come in loaden, they may not have a great height to go up.

The Box is in figure an *Octagon* or eight square, each square
B 1 T nine

nine inches in breadth; it is covered close at the top, having a square hole in the middle, four inches long, and broad, with a shutter that slides to and fro in a groove, about half an inch longer than the hole: It hath four windows, each in figure a Rhombus or square, or like an ordinary Pane of Glass, opposite to one another; in them are Panes of Glass with Shuttersto cover them. The door for the Bees is divided into six holes, or two large ones; at the bottom of that square which stands for the front, each hole half an inch broad, and an inch high, for helping the Bees better to carry out their dead; each of these holes have a shutter which slides up and down in a groove, to cover less or more as the season requires, or as occasion offers: Each Box hath two iron handles

handles with joints to be placed about the middle of the Box, on the sides thereof, for lifting it up when another is to be placed under it, or for transporting the same for use when the Bees have wrought down to the lower Box. At the top of the Box there is a crease or rebbet all round it about half an inch in depth on the outside, and an inch in height, and another in the inner side at the bottom, which serves to fix them when placed upon one another. Each Box hath also a hole at the side which shuts with a sliding cover, or little Door with hinges ; this is to be open'd and used (when the Boxes are placed upon one another, and the uppermost is full of Honey, and when all the Bees are wrought down to the lower Boxes) for shutting the square hole in the

top of the lower Box, that so its cover may divide and cut the work in the upper Box, from the work in the lower, and for this end it is fit, that the square end of the sliding shutter be covered with Latten, or iron well sharpened, that it may cut the work the better.

Within each Box there is a square Frame made of four Posts, joyned together by eight small sticks, and four others crossing these, and one standing perpendicular in the middle of the Frame: the whole Frame consisting of the four Posts and of thirteen small sticks, is to be put within the Box, and fastned to four sides thereof, by eight Screws, two in each Post. Upon this Frame do the Bees fasten their work, which is very convenient, for when you have removed a full
Box,

Box, you need but unscrew the Frame, and then may you take out all the work without breaking it, or the Box or Frame, and then you may with pleasure behold the excellent Fabrick which these industrious Insects have ingeniously framed.

The use of the Panes of Glass, is not only for pleasure, that through them you may behold the work and labour of the Bees, but also to let you know their strength, idleness, fullness, or want of room, that so you may enlarge or remove them as you please. And where some may think that the work of the Bees will darken the Glass; I declare that I have always found the contrary by experience.

A Description of the several Figures of a single Box, its Frame, and of a Colony or three Boxes placed on the top of one another in a house.

Fig. 1. Represents a Box projected, lying on its side, with its open end to the eye where the Frame is projected.

B B B B The Box.

C C C C The Screw-pins to fasten the Frame in the Box.

D D The Frame within the Box.

E E The Windows.

F F The Doors for the Bees to go in and out.

G The place by which the cover of the hole in the top is shut.

H H The inner rebbet or crease at the bottom.

I The square hole in the top of the Box.

Fig. 2.

Fig. 2. Presents the Frame.

a The Frame for the Bees to fasten their work on.

Fig. 3. A Represents a Box standing upright,

B The square hole through which the Bees work down.

C The shutter that covers the hole upon occasion.

D The piece of wood that fills up the groove in the Box that is upmost.

E The Doors for the Bees.

F Shutters for covering the doors in Winter.

G The windows with panes of Glass in them.

H Handles for lifting the Box when full.

I The rebbet or crease at top for fastning the Boxes upon one another.

K The Pegs that fasten the Boxes together.

Fig. 4. A Represents a House with the doors standing open, with one Colony of Boxes standing therein. It needs no description, for it is nothing else but three Boxes placed a top one another.

B The Bees flying out and in at their little doors.

The

The Description of the Bee-House.

THE House may be made either of Wood, Bricks, or Stone, &c. and covered either with Lead, Tile, &c. yet what ever it be covered with, it must be siel'd closely with good well season'd Wood, so smoothly that no Vermin may have access or place to lodge in, also the bottom must be lin'd with boards well joyned together. It will be convenient that it be two foot high above the ground, and stretched half a foot without the door, that the Bees may more conveniently rest on it before they enter the House, or when they come forth to view the weather, or to lay
and

and sun themselves in a good day. This extension of the floor will serve also for preserving the House from Vermin that none creep up the wall and enter.

A The height of the Wall of the House, which is two yards from the floor to the lower part of the roof.

B The Doors standing open, being the fore-part of the House, which must be so covered as at convenient times it may be all laid open to the Sun; wherefore it must have

C First a long and broad door hanging down upon iron hinges to fold up, and so fastened by an iron. The breadth of this Door must be half the height of the wall of the House, and it is so long as betwixt one corner of the House and the other.

E Two

E Two Doors fastned with iron hinges side ways joining in two creases made in them, as two opening doors are commonly made to join; they are of equal breadth and length.

F Two narrow Doors each in length equal to the preceeding, but far less in breadth. These open sides-ways and shut in a rebbet or crease made as in the former door. These are open all the summer, and shut all the winter. The reasons why the doors are thus fashioned and fastned are first, the greater Door hanging downward, is only to be lifted up, and opened once or twice in the year, at most, when you are to remove any Boxes for taking your Honey, or when you are to add a Box more, then are all opened. The other two doors next it are opened upon the like occasions

occasions or after, as the Bee-Master pleases, when he desires to view their work, for they give light to the glass windows, so that when he looks through the doors in the back of the House, the glasses receiving light at the other side will show the work better; but observe, this must not be done in the heat of the day. The upper folding-door is kept shut also at those times, to keep off the rays of the Sun from the Boxes and Bees.

In the figure of the back of the House C C C represent the three doors therein opposite to the three Colonies placed within the House; if you place more Colonies, you may make more doors.

H Represents that part of the floor of the House, which below the two lowest doors

doors in the front of the House is protracted some three or four inches.

I Each Pillar of the House must be protracted one half foot below the floor, for feet for the House to stand on, and to keep out Vermin.

K Your House must be furnished with good Locks, Hinges, and other things thereto belonging; also you must have a spout of Lead to convey the water, which drops from the roof to the corners of the House, that it fall not upon that part of the floor in the front of the House, where the Bees rest themselves, when going out or coming in, lest it should kill any Bees.

The House may be made nine foot long and a yard in breadth within from side to side. As for the height of the roof
above

above the walls, it may be made flat, or of any convenient length as the Bee-Master pleases.

*Of the Convenient Situation
of your Bee-House.*

HAVING described the Boxes and House, it will be convenient in the next place to advise you how to situate your House with greatest convenience, for the warmness, quiet, and conveniency of flying abroad and returning home of your Bees:

1. First, of all your Gardens, Commons, and inclosures, that upon which you would bestow most pains in planting and hedging, is the fittest place for building your Bee-House, for
Bees

Bees get their most profitable food off Trees.

2. Take care you be well guarded from the North-winds or cold storms, and see that the House be sensible against all their enemies and yours; their enemies are ordinarily Swallows, Mice, Smoak and all uncleanly things; yours and theirs are Thieves.

3 Place your House in the most Vally ground, that the ascent may be when they go abroad, and the descent when they return home loaden.

4. Place not your House directly East and West; but a point or two from the South-East to the North-West, because the Bees come not forth in the Morning before the Sun is risen above an hour, and they continue above an hour at work and exercise after the Sun

Sun is set, if the night be fair and calm, whereby several days some hours are gained to their advantage.

5. Beware you overlay not your ground with too many Colonies, for you will have more profit of a few Colonies well nourished, than of many in overlaid ground; but where there are Forests or Woods, there can be no overlaying; wherefore build your House according to your ground.

6. It will be worth the expence and pains of any Bee-Master to plant such Trees in his ground as conduce most for the food and nourishment of Bees, such are the Oak, Sallow Tree of all sorts, except the Privie Sallow, but especially the Willow which is the gray Sallow, and hath a green early bud before Easter, which
are

are called by the Vulgar, Palms, upon which the Bees begin their early work, as also upon most others. It will be convenient to plant in their Gardens of Tyme and Balm abundance, with many other sweet-smelling Garden herbs.

7. You may build your House nigh Meadows, where Cattel feed, for it will conduce for their thriving: for it is observed that Cattel thrive best where there are most Bees. The reason may be that the Bees suck out some of that which may hurt the Cattel.

Your Bee-house being built of Timber, Brick or Stone, and situate in a convenient place, is next to be furnished with Colonies of Boxes made of proper Materials, and those Boxes with Bees according as is directed. Which that you may the
C better

better do, take these following instructions.

First, it's necessary that such as are not furnished with Bees already, do provide themselves with stocks of good old Hives. The best Bees are known by their great noise and buz, after you have blown hard in their Hives; for it is not always the heaviest Hive which is strongest in Bees. As for their bodies, they are black, bright, small and smooth. The most proper season for transplanting of Bees is betwixt *Michaelmas* and *Candlemas*, that is, if the Bees are to be brought from a far place, because in the Winter Bees are most at rest.

Secondly, Your Bees being once settled in the place where you intend to keep them, must be transplanted from the old Form of Straw-Hives into their
new

new Colonies of *Boxes*, at or about the beginning of *March*, as the season shall favour; that so they may begin their labour with the early spring, and their owners may at the end of six or seven Months of the same year, both reap the profit, and make proof of the contrivance. Yea shaking a Swarm off from the bough of a Tree into your Boxes, may prove a very successful way of planting them, if they be good early Swarms.

The manner of transplanting your Bees out of the Straw Skeps into the Boxes is as follows, *viz.* Take one of your Boxes, rubbed with Honey, sweet Herbs, Water, and Salt; as you use to dress your old Skeps when a Swarm is to be put into them; Then having opened the square hole in the top of your Box, and your Colonies

placed at equal distance from each other in the *House*, take your strongest and best furnished *Straw-Hive*, and place it on the top of the aforesaid *Box*, with its front to the front of the *Box*, and plaister it round, so as to stop all passages whereby the *Bees* might come out any other way than through the little holes in the lower part of the front of the *Box*; let all the windows of the *Boxes* and all the doors of the *House* be shut and kept close, except at such times as you have occasion to look through them (which ought to be at the Evening or Morning) either to observe what progress the *Bees* make in their work, or for pleasure and delight; only the small ledge at the bottom must always be kept open unless in Winter, for then the *Bees* by
 their

their going abroad receive much damage and no advantage. When you perceive your first Box full of work and Bees, take another prepared as the former, and lifting up the first Box with the Straw-Hive still on its top, place this second under it; which when you observe to be full as the former, you must in like manner supply a third, unless it be very late in the year; which continual supply of Boxes, as often as occasion requires, and constant circle and succession of work therein, is an unquestionable convenience (which many have attempted, but none ever heretofore attained) for preventing the Swarming of Bees, abroad; which are known never so to Swarm, unless for want of room and fitting accommodation for themselves and their work. But if

any be desirous that their Bees Swarm out of the Boxes in order to the planting of new Colonies, this you may easily effect by forbearing to supply them with an additional Box when needful: so may you at once be furnished with a Stock for a new plantation, and with a convincing proof, that want of room is the only reason why Bees Swarm abroad; for it is not in the least to be questioned, but that the Bees will descend and continue their work out of the Straw-Hive into the Box on which it is placed, and out of that into the next under it, and so still on in pursuit of their labour, it being Natural for Bees ever to begin their work in the top and upper part of their lodging, and from thence to work downward.

The manner of taking your
Honey,

Honey, according to this new Model is briefly thus, *viz.* Regard must be had to the season, the richness of the store, and strength of the Bees; that is, if there be two Boxes full of Wax and Honey before *August*, you may remove the Straw-Hive when you please, wherein you will find no Bees but Wax and Honey, and then will there be no more use for any Straw-Hives. At *Michaelmas* which is the usual time for taking of Honey, if the third Box be placed before this, and the Bees have some work in it, you may take off the upper Box, which will also be full of Honey; and after a right Judgment made anent the state of your Bees, you may take half or whole of the Honey and Wax therein according to discretion. Thus for the first year, and so

yearly, as the seasons prove good or bad.

The way of removing the Boxes when full of Honey is this, *viz.* to open the little door in the side of that Box which is uppermost, and with the shutter at once to cut the work (perfectly dividing betwixt the Bees and upper work) and close the square hole of the lower Box, thereby securing the Bees and their work in the lower Boxes; so that by this dextrous and commodious way of removing the Honey, the destruction of the Bees, by stifling, drowning, violent driving or otherways (the usual but unkind requital of their industrie) and one great reason of the scarcitie of Honey and Wax, and of the adulteration of both, is prevented; and sufficient winter store is reserved
for

for the Bees, according to the season; judgment being made thereof by inspection through the Glass Windows.

If through the indiscretion or mistake of the Bee-Masters, by reason of an ill season, too small a quantity of provision shall be left; then, feeding them may be necessary: For this end the best expedient is to put a Box with suitable provision under them. There are several sorts of provisions used by Bee-Masters, as Honey, boiled Wort, Bean Meal mixed with Honey, and many others, to which we refer persons according to the Conditions of their Family and the Country.

If there be no small Springs or Brooks, wherein there are Pebble Stones, a little surmounting the surface of the Water, then set Troughs with Water

ter, and little chips swimming in it for the Bees to light on, that they may have the advantage of the Water without hazard.

Of the Excellency of this New Method above the old.

THE Excellency of this New Method above the Old, will most clearly appear by comparing them together, and shewing the inconveniencies of the Old and the conveniencies of the New; for it is an approved axiom, *Contraria juxta se posita magis elucescunt*: First I shall propose the inconveniencies of the Old Method: which are,

- I. The charge of keeping a person, near the whole
three

three Months of *Hay* and *Corn* Harvest to attend them.

2. The trouble of preserving them in their Swarming, from going away, and then, the difficulty of getting them into their *Hives*. Here may be (deservedly) reckoned the great inconveniency which may follow upon the Swarming of Bees, if they shall chance to have bad or stormy weather, then run they the hazard of being starved and famished.

3. There is a great loss of time, in the confusion which they are in before they Swarm, for three Weeks or a Month, and their unsettlement for a week afterwards, which takes up one third of their time.

4. The mispending of their time in idleness and luxury, wherein they only beget a numerous brood of beggars who
die

die in the Winter, in stead of employing all that time in a course of profitable labour for their owners, which with the former loss makes two thirds of their time.

5. The destroying of the most industrious part of the Bees by smothering or drowning, which is an ill reward of the industry of so good servants, and a great loss to the owners of them.

6. A further Inconvenience, is their being exposed to Cattel, Vermine, excessive heats and colds, with many other casualties.

Secondly I will propose the conveniences or advantages of this new way.

1. In this new way there is no need of any to attend them. It will prove a recreation to the Bee-Masters to take inspection of them, and mark how they

go forward in their work, since they never Swarm here, but only hive themselves by an additional Box.

2. By their additional Box which preserves them from Swarming, idleness, and luxury, there are two thirds of their time gained for their owners profit; and the Bees are freed from the hazard of being starved, though the weather should be never so bad.

3. All the vigorous Bees are preserved alive to repeat their industry for their Masters advantage.

4. By the commodiousness of your House which is close and strong, and the convenience of your Boxes which are also close, you have safety and preservation to your Bees.

5. By reason of your Glass lights

lights you are always able to make a Judgment of the State of your Bees: The pleasure of beholding these excellent Artists first build, and then replenish their *Houses*, their excellent order in all their work, and many other rarities which you may see daily in all their *Houses*, may justly be accounted among the conveniences of this method, which the old had not.

All which considered, it may be very easily computed, what great gain, profit and advantage may redound to the publick, and every Bee-Master in particular, from this new form and method of improving, beyond any other whatsoever Bees, through the excellency of the *Honey* and *Wax*, which is free from smok and water, its great encrease and quantity, and advantage

vantage in point of time, two entire Months at least, and that in the chief season of the year, being gained by this new way which was wholly lost by the other, through the great confusion and unsettlement of the Bees before, in and after Swarming.

Objections Answered.

Object. I. Since the Bees are still preserved from destruction, then we find by Calculation, they will increase to so great a number and Swarm, that the Colonie will not be able to contain them.

Ans. I. Supposing all to be true which the objection affirms, the inconveniencie would be no more than this, that we would be obliged to have a great number of Colonies, for keep-

keeping these industrious Creatures in. And sure there is scarce any so churlish, that he would not be at the expence to buy them a *House*, who will requite him with double yeatreble interest, and pay him the principal the very first year. But

Ans. 2. If the *Honey* be seasonably taken from them, so as room be left to work in, they will be more industrious and less luxurious; so that experience will teach you, that they increase to excess, only because of idleness and heat, for these make them luxurious.

Ans. 3. It is sure by experience that Bees live not above three years in vigour, and after that time they ordinarily die; so that according to the course of Nature they live not above four years in all, which is the chief reason for providing

ing

ing three so convenient rooms for each Colony.

Object. 2. That by depriving them of their Honey and not destroying them, you preserve them alive to be starved in Winter.

Ans. It being clear by the premisses that they have redeemed of their time, and consequently made two third parts of provision more in that time, the Owners may also safely take away two third parts of their Honey upon a right Judgment made by inspection through the Glass, and leaving but one third, as they who leave a Hive full of Bees and Honey.

Object. 3. Why might not the Boxes have been made four square rather than Octagonal?

Ans. 1. The Cells of the Bees themselves (as may be easily marked) are Sexagonal, and I

have found the Octagonal figure convenient for the Bees working.

Ans. 2. There is not any square which is not needful, and has not some one part or other of the Frame joined to it, as you may evidently see if you but take a view of it within the Box.

For answering any other objections, I judged the perusal of the following Letter would be very necessary, written to me by a worthy and Reverend Gentleman, who for many years past hath been a curious observer of the contrivances of these most curious and industrious Creatures, with the answer thereunto, as followeth.

The Copy of a Letter directed by the Reverend Mr. Samuel Mew, to Mr. John Gedde.

Worthy Sir,

I Have with a great delight perused the directions you have given the publick, concerning your new invention, and excellent Method for the better ordering and improvement of Bees, for their conveniency, and safety, and the owners profit. Upon the review of the whole (the Frame, the Boxes, the Colonies, the House or Case, and your excellent design by all these) I must needs say, that to me the contrivance seems curious and ingenious, befitting those admirable Creatures,

you so industriously provide for and that (ni sint vatum præ-sagia vana) you have built your self a Monument as well as them an House; there is not a Bee which is not your debtor for her ease and life, and that will not be yet more industrious to preserve her benefactors name in Honey.

I have had for these twenty years and upward, the opportunity and content to observe these pretty Artists, you contrive for, at work, through Glass placed for that purpose, and therefore am an ocular witness of what you most truly affirm, that they all begin their work at the top of their Hive; and I also easily believe that their Swarming is for want of room in their old Mansions, and that Swarming is as well an hindrance to them as

it is certainly a trouble and charge to the owner.

Good grounds these for your undertaking; and you have also happily made use of them: but there is one thing yet (it's not to find fault, but to be informed, that this uncivil But comes in) which my observation will not let me so readily subscribe to.

You are pleased to suppose, at least, if not affirm, that when the upper Box is full of work, and more room is made for the work-folks, by the under-setting of an empty Box, that they will so generally quit the full one, as to betake themselves wholly to the empty Box; and that they may after some convenient time, without considerable damages be shut from their rich labours. This is that which stumbles me, for at this instant I am writing, the upper
D 3 story

story of my Glass Hive is as full as it or any other Hive can well be imagined to be, of Combs and Honey, and the Bees have for this fortnight continued their work down unto the lower part, and their great business at present is there. Now should I at any time of the day adventure to sever between these two stories (which might be done, for they are loose) it could not I conceive be without great damage, if not ruin of the whole: for besides that at the busiest time of the day when most are employed abroad, there is a considerable number of the most industrious Bees mending or viewing or securing their work, there is also the Queen Bee in person with her guard and attendants, as within this three or four days, others with my self had the content for a
 consti-

considerable time to be witness of; should, I say, all these Commons be taken away, it would be a dangerous main; or if their Queen chance to be of their number, I suppose a deadly one. If you please to solve this knot for me, Eris mihi magnus Apollo, and I doubt not but you can do it, either by direction to the fittest time of the year for the operation, or to some way to force them downwards.

I congratulate you your happy invention, and the perfection it is already reached to, the Royal Societies approbation and your own seven years experience; I am the more reall herein in regard I have formerly imployed and wearied my own thoughts on this subject, and was fain at last to give it over as unfeasible; partly from the inconveniencies abovesaid, foreseen,

and partly for want of an apprehensive workman; but now I am, where I would be, at anothers trouble, and may enjoy the fruit of your pains at an easy rate: I heartily wish your profit may pay your labors both as you are an Inventor and a Bee-Master. If Sir, your occasions will suffer, and you think fit to favour me with a line or two, in answer to this scribble of mine, be pleased, I pray, at the same time, to send the price of one of your Boxes with the Frame, as also a Licence from your self to make use of it, and you will yet further engage,

Easton in Gloucestershire,
July 21. 75.

Your unknown,
but real Friend

and Servant,

Samuel Mew.

The

The Copy of a Letter sent
by Mr. *John Gedde*, to
the Reverend Mr. *Samuel Mew*, Minister of
Easton in *Gloucestershire*,
in answer to the former.

SIR,

Yours I received, and re-
turn you hearty thanks
for the encouragement of the
small endeavours used by me
for preventing the Cruelty com-
mitted upon, and the violent
death of so profitable friends
and servants, as our Common
friends the Bees; which (from
such a worthy and intelligent
person as you) may be a suffi-
cient shade and shelter from
most other prejudices.

But,

But, Sir, for answer to the objection which you very modestly raise, which is, that you doubt, whether or no the Bees will so generally quit an upper full Box, for the room of an empty one put under them? For your satisfaction herein, I shall tell you what I have many times found in my experience, and what I have still observed of late, in the viewing of several Bees in England, which are in this new form of Hives, which to all Bee-Masters is evident; that when Bees have wrought the upper Box full, they continue their work through the square hole in the empty Box, and so down to a third under Box, as the season is good. Then may you easily behold the body of the Bees down with the workers, and few or
none

none in the upper Box, yea at such times of the day or night there are scarce any (if you except a straying Bee, as if it were a Sentinel) to be seen in the uppermost Box, but the whole body of the Commonwealth will be in the lowest, as hath been said; wherefore at such times, by opening the door in the side of the Box, and shutting the slider in the grove which covers the hole in the top of the second Box, you will easily separate betwixt the Bees and their uppermost work, without any damage to the Commonwealth or Colony. Of this there are many practical demonstrations to be now seen in England: And for your further satisfaction, I have sent with the Gloucester Carrier one Colony of Boxes, one Licence, and a Book of directions,

to

to be used by you, as a Token of
 my Respects to a Person of so
 much worth, and so profitable
 to the Commonwealth you live
 in; hoping that after you have
 received and viewed the Colony,
 there will rest no place for any
 further scruple, from such an
 objection; I will add no more
 but that I am,

London, SIR,
 18. Dec.
 1675.

Your humble

Servant,

John Gedde.

Another

Another Objection that I have frequently met with, is,

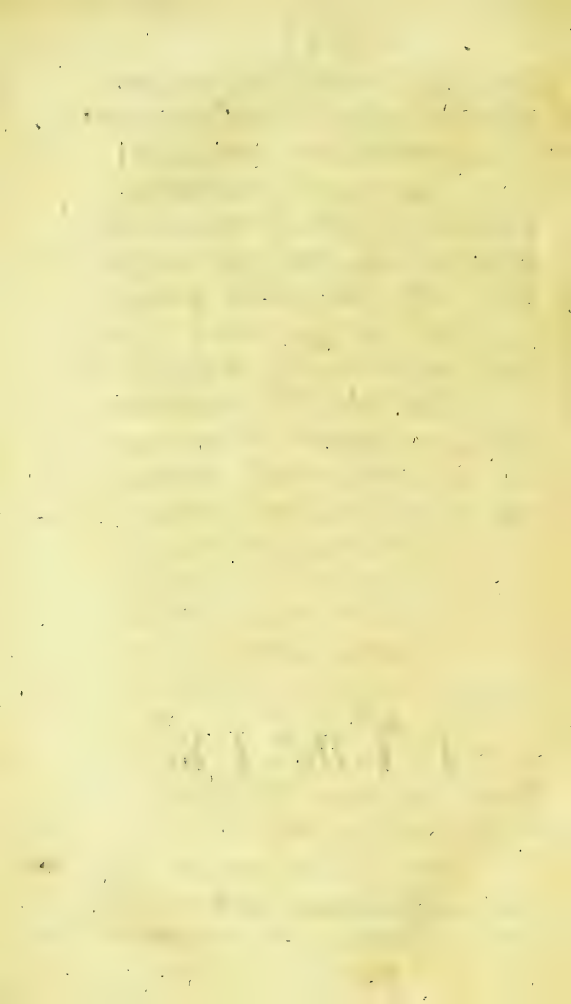
THat the Bees naturally loving warmth, these Boxes will prove too cold, which is a great enemy to Bees.

For answer to this objection I shall give you a true account of an Experiment I made on my own Bees for satisfying my self of this objection; Which was, I apprehending this to be true that the Boxes would prove cold, I did take as much Linnen cloth, dipping the same in their own wax melted for that purpose, and lined the boxes therewith, fixing the same between the frame and the box to the board. Then I placed them under the Bees so soon as the proper season came

came of their descending, to go abroad and fall a working. They begin at home. And I observed the whole *Hive* with one consent divide themselves in companies; some part following other in Ranks, cutting the cloth thorow by a thread, until a large piece of cloath at once would fall down. Then another company dividing that piece in parts; another company dividing it hair by hair: So many Labourers carrying it forth at doors, and then so many Porters carrying it (when the weather was fair) off their precincts; that in some corners near their *Hives* a handful of Cotton might be found each week for two or three months. This was all the profit I had for a whole year of this *Hive*, and was forced to feed them all winter :

ter : but I judged the observation and daily beholding their labour (which I could not help at all, nor prevent after begun, without great prejudice to them) worth all my loss, which *Hive* did afterwards succeed as well, as any other who had not been so distressed. And this did also answer my objection, that the Boxes were not too cold for Bees, having a *House* well fixed to stand in.

F I N I S.



POSTSCRIPT.

THE Occasion of this Postscript is, because of some Observations lately come to my knowledge, and from viewing of the practise of the new way for Improvement of Bees, in my travelling through several Counties of *England*, after the Printing of the former tract; And for answering some doubts and questions that did arise from others, through their unskillful managing of their Bees, in this new way; *not observing the directions given to the publick concerning the same.* That others may avoid the like inconveniences, in the managing of their Bees, according to this new way, I have set down the most material of the same, as follows.

E

1. Such

1. Such as are too late in the year in Transplanting their Bees, when brought from the place of their old Abode and Acquaintance to a new one, where they are intended to be placed on Boxes, which is most proper betwixt *Michaelmas* and *Candlemas*.

2. Such as have Bees already standing in the places where they intend to set their Colonies, being too late in placing of them on their Colonies; which is most proper in *March*.

3. Others neglecting to make their houses close, to be a sufficient shade from the violence of the hot Sunshine, which surprizes, and breeds such a Confusion and Reeling among the Bees; that sometimes provokes an

an untimely, unadvised and unprepared swarming, to the great prejudice of that Commonwealth from whence they are.

4. Others not only giving them bad houses or shades, but none at all, more than the ordinary Hives; exposing the Boxes to be rent, crackt and torne, with the heat of the Sun; that so the Bees have no peace at all in them; but in a continual confusion, and in a much worse condition than if they were in straw Hives.

5. Others not seasoning the Boxes rightly with Water and Salt first, then with sweet sented Herbs, and anointing the corners of the Boxes and the sticks with Honey.

6. There are others that are

too long in placing second Boxes under the first; which hath occasioned an unexpected forced swarming out of the first Boxes; wherefore special notice would be taken, to observe when the Bees have wrought down three quarters of the first Box, that they be always supplied with an empty Box prepared as before; especially if it be in the month of *May* or *June*.

7. Others there are who through their unskilfulness (never being much acquainted with Bees) take no care to assist them seasonably, in destroying the drones who consume their Honey; which a few hours attendance, in some hot days, when drones come forth, may do, especially in the months of *June* or *July*.

These

These Defects being helped and amended, without doubt they will find this Invention commodious both for profit and pleasure.

Besides these inconveniencies through mismanagement of Bees, I hear there are some who do stumble and scruple, in the practise of this new way of Improving Bees, by occasion of a discourse, lately published; wherein the Discourser would pretend to the best way for Improvement and advancement of Bees; and yet in the discourse it self, of these so useful Creatures, the whole scope and design seems to be, to dissuade all from using any means or indeavours to preserve the life of these excellent Artists, and, by what Arguments he can, to perswade all to destroy them by violence, in smothering them

with Brimstone, &c. which certainly is a most unjust and ungrate requital of so careful and industrious servants, by their cruel Masters, if possibly they can know any way how to prevent it. Therefore for further and fuller satisfaction to all who shall meet with this Discourser's Arguments; I do hereby declare, that what is asserted therein, or rather ignorantly proposed, is expressly contradictory, to the manifold known, received, and reiterated experiences, of many hundreds of several persons, who have practised the aforesaid new way for Improvement of Bees; and have been careful to observe the Directions; For there is none that have set up their Colonies in *March*, and placed their Hives on them, and observed the Printed Directions;

tions; but before the twentieth day of *July*, they might with safety, in a Convenient time, take off the first Hives, without trouble, hazard or harm to the Body of the Comonwealth of Bees; and the few Bees that may be lying or lurking amongst the Combs, may by a due care had of the season of taking, (being to shut your slider in the middle of the day, and at evening, or timely in the morning. Thereafter, to remove your Hive for use) be also preserved, if any good Bees be there, by brushing them off the Combs, and they will go to their Colonies; or if they be drones, by killing them; a part of both will be there undoubtedly; But that the full body of the Commonwealth, will be in the lower Boxes, many experiences have proved. And

that they go on in good government, and stout working, is apparent to all beholders. Which answers all objections, and may satisfy all doubts that arise through want of the Queen, or such like.

I hear also, that some others alledge and object, that this new way is dear and costly to begin; they like the invention, the way they would try, but its chargeable. Unto such, nothing but a visible demonstration, of a visible and evident profit, will be clearest evidence for the satisfying that objection; which profit may appear to them as well as it doth to many persons in several places in *England*, who have writtento me, & some have told me by word, (and I have seen proof thereof myself; yea even about *London*, where Bees cannot so probably thrive as
in

in the Country) that they who have laid forth and bestowed on their House, Licences, and Colonies (consisting of nine Boxes, being three Colonies) all made of Dale, at the best hand, with all Conveniences needful, and the price of all not exceeding Four Pounds Ten Shillings, have already taken off three Hives, of three Colonies, and left their under Boxes full of work and Honey for the Bees maintenance, and without any hurt to the Commonwealth; In which Hives, some have less, some have more Honey; But the least that I have known this year, was three Hives taken off three Colonies near *London*, which weighed Eighty Pounds of Honey and Wax, (and a sufficient stock left for the Bees in the Colonies) which
any

any will allow to be worth at least a Shilling Sterling a pound, Honey and Wax; which amounts to Four Pounds; so that the whole expenses, is very near paid the first year, and a new Stock going on intire for further Trade; And this is a sufficient Demonstration both of the profit and pleasure, especially the first charge being all, and none thereafter.

So that this new way, being found by manifold experiences to be so publickly profitable; I know not what esteem any such Discourser or discourse should have, more than those, who evidence themselves to be enemies to their Country, and all good house-keepers, who have need of such profitable Servants as Bees are.

Yet for further satisfaction to any who shall happen to
hear

hear or see such discourses, tending to perswade the destroying so good and faithful servants as the Bees are: For their preservation, in this new way, and for the Confirmation thereof I shall add, besides my own experience; that it is no new *Humm* nor notion without good ground; But that it was the opinion and Judgement of many famous learned and wise men of old, and late; some whereof I shall Instance, as *Olaus Magnus*; Read in his History of *Goths* and *Vandals* in English, Book 22. Chap. 3. Pag. 340. who also makes mention of an *Italian* who writeth, that in the City of *Askely*, there was a strict and severe Law against those who should destroy a Swarm of Bees; unless they had a just cause, and could make it appear, when called to account for it:

judg-

judging it a part of extreme injustice and cruelty, to take away, without cause, both the lives and goods of such good and faithful Servants.

I find also all the great Bee-masters in *England* of old and late, of this judgement and opinion; and that they tryed several ways and means for preserving the lives of their Bees, and leaving them a competency of their own goods to feed upon and live; such as famous Mr. *Charles Butler*, Mr. *Hill*, of *London*, Mr. *Hartlib*, Doctor *Mew*, Doctor *Wilkins*, Mr. *Purchas* and many others; whose writings are yet extant in print, and so well known that I need not be particular in the citing of them. All which famous Authors and Bee-masters, do unanimously recommend, to the industrious
and

and curious Lovers of Bees, to be continually searching after and studying to find out a certain and sure way for the preservation of Bees, from the old and cruel way of destroying them; as also they do all acknowledge him to deserve most esteem, who should prove most successful, in finding out the best way of preserving Bees.

F I N I S.

The first of these is the fact that the
the other is the fact that the
the third is the fact that the
the fourth is the fact that the
the fifth is the fact that the
the sixth is the fact that the
the seventh is the fact that the
the eighth is the fact that the
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